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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,209	10/30/2003	Dong-Sik Cho	SAM-0444	2218

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Steven M. Mills
MILLS & ONELLO LLP
Suite 605
Eleven Beacon Street
Boston, MA 02108

EXAMINER	
MULL, FRED H	

ART UNIT	PAPER NUMBER
3662	

DATE MAILED: 02/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/697,209	CHO, DONG-SIK	
	Examiner	Art Unit	
	Fred H. Mull	3662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 January 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 January 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments on p. 11-12, with respect to the rejection(s) over Dutka and Abraham have been fully considered and are persuasive. The rejection(s) of these claims have been withdrawn.

2. Applicant's arguments on p. 10-11, with respect to the rejection(s) over Schipper have been fully considered but they are not persuasive.

First, applicant argues Schipper fails to disclose "estimating the position of the point on the rotating body by using differences of every two pseudo ranges." (p. 10, 4th paragraph, lines 4-6). However, none of the claims make any reference to a point on a rotating body, or even a rotating body.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a rotating body, a point on a rotating body) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Second, applicant argues "Schipper fails to teach or suggest a method of determining position using a global position satellite (GPS) signal that includes ... measuring pseudo ranges from the first and second GPS signals and estimating the position of the receiver by using differences of every two pseudo ranges" (p. 10, 5th

paragraph, lines 1-5). However, Schipper does teach this. In col. 4, line 52 to col. 7, line 19, particularly equation 10, Schipper discloses determining the position of the receiver comprising measuring pseudo ranges from first and second GPS signals received at different times, and estimating the position of the receiver using differences of every two pseudoranges. Note that Schipper states: "The notation adopted in Eqs. (10)-(16) applies to signals received from two different satellites (j1.noteq.j2) **and to signals received from the same satellite (j1=j2)**. One or both of the observation times may, if desired, coincide with the time t0. The satellite coordinates (x_s (t),y_s (t),z_s (t)) for the times t=t_m and t=t_n **need not refer to the same satellite**, or even to two or more satellites within the same system of satellites (e.g., all GPS or all GLONASS or all LEO), as long as the satellite coordinates are accurately known." (col. 5, lines 23-31, emphasis added). The first emphasized part says that the pseudorange difference in equation 10 can use the same satellite in each pseudorange variable, which are at different times. The second emphasized part says they need not refer to the same satellite, which means that they **can** refer to the same satellite.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-41 are rejected under 35 U.S.C. 102(b) as being anticipated by Schipper.

In regard to claims 1, 20, and 37, Schipper discloses receiving at a receiver a first GPS signal from a first GPS satellite at a first position of the first GPS satellite;

receiving at the receiver a second GPS signal from the first GPS satellite at a second position of the first GPS satellite;

determining a position of the receiver using the first and second GPS satellite;

using as many a four satellites in positioning (Fig. 1; col. 5, line 36 to col. 9, line 4), where the GPS satellite(s) are at different positions at different times as a result of their orbital motion; and

determining the position of the receiver comprising measuring pseudo ranges from first and second GPS signals received at different times, and estimating the position of the receiver using differences of every two pseudoranges (col. 4, line 52 to col. 7, line 19, particularly equation 10). Note that Schipper states: "The notation adopted in Eqs. (10)-(16) applies to signals received from two different satellites (j1.noteq.j2) **and to signals received from the same satellite (j1=j2)**. One or both of the observation times may, if desired, coincide with the time t0. The satellite coordinates (x_s (t),y_s (t),z_s (t)) for the times t=t_m and t=t_n **need not refer to the same satellite**, or even to two or more satellites within the same system of satellites (e.g., all GPS or all

GLONASS or all LEO), as long as the satellite coordinates are accurately known." (col. 5, lines 23-31, emphasis added). The first emphasized part says that the pseudorange difference in equation 10 can use the same satellite in each pseudorange variable, which are at different times. The second emphasized part says they need not refer to the same satellite, which means that they **can** refer to the same satellite.

In regard to claims 2-18 and 21-36, Schipper further discloses using any combination of four times, and thus, four positions, in the pseudorange difference calculation, as well as either or both of two satellites (col. 4, lines 64-67).

In regard to claim 19, Schipper further discloses using the standard pseudorange equations (col. 12, lines 45-65)

In regard to claim 38, it is inherent in Schipper that he determine the number of usable satellites, since he has a separate calculation procedure for determining the position with one satellite (col. 5, line 35 to col. 7, line 19) and with two satellites (col. 7, line 44 to col. 8, line 9).

In regard to claims 39-40, Schipper further discloses a stationary measurement request and selection unit for requesting that the user remain stationary during determination of position (col. 3, lines 10-67).

In regard to claim 41, Schipper further discloses the position calculation unit comprises a time difference measurement calculator which calculates the position by measuring time differences between GPS signals (col. 4, line 52 to col. 5, line 20, particularly equation 10).

4. The examiner also finds the following reference(s) relevant:

Okada (abstract), Mashkov (abstract), and Cisneros (col. 32, lines 39-42), which also difference pseudoranges from different times.

Diggelen (¶54), which discloses that pseudorange rates may be computed by differencing pseudoranges at different times. Thus, any reference that determines position using pseudorange rate (e.g. Westerfield (col. 4, line 68 to col. 5, line 5; col. 7, lines 45-51), King (col. 5, lines 21-31)) determine position by differencing pseudoranges at different times.

Applicant is encouraged to consider these documents in formulating their response (if one is required) to this action, in order to expedite prosecution of this application.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred H. Mull whose telephone number is 571-272-6975. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas H. Tarcza can be reached on 571-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Fred H Mull
Examiner
Art Unit 3662

fhm

Thomas H. Tarcza

THOMAS H. TARCZA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600